

Listing of the claims:

1. (Canceled)
2. (Canceled)
3. (Canceled)
4. (Canceled)
5. (Canceled)
6. (Canceled)
7. (Canceled)
8. (Canceled)
9. (Canceled)
10. (Canceled)
11. (Canceled)
12. (Canceled)
13. (Currently Amended) An axially flexible robot line routing apparatus for use with a robot arm having an axial path for the line, the routing apparatus comprising:
 - a wrist having a first member concentrically attached to the robot arm along the axial path and rotatably moveable with respect to the arm about the axial path;
 - ~~a conduit concentrically positioned in the wrist along the axial path; and~~
 - at least one robot line positioned ~~in the conduit in a helical orientation with respect to itself along the axial path; to allow extension or compression of the line along the axial path; and~~
 - a bellows positioned along the axial path connected to the line and the robot arm allowing extension or compression of the line along the axial path.
14. (Withdrawn)
15. (Currently Amended) The apparatus of claim 13 further comprising a mounting plate positioned between the wrist and the robot arm and attached to the robot arm, ~~and the wrist~~ the mounting plate having a through hole concentrically positioned along the axial path.

16. (Withdrawn)

17. (Withdrawn)

18. (Withdrawn)

19. (Currently Amended) The apparatus of claim ~~17~~ 13 wherein the bellows sealingly ~~engages the conduit~~ connects to the robot arm and the line. ~~through sealing attachment of the bellows to the mounting plate and the line.~~

20. (Currently Amended) The apparatus of claim ~~17~~ 13 further comprising a guide plate positioned along the axial path having at least one hole for passage of the line through the guide plate, the guide plate concentrically around the line having a peripheral surface engaged by the bellows through a ~~spring retainer~~ retaining ring positioned around the peripheral surface, opposite the mounting plate along the axial path.

21. (Currently Amended) The apparatus of claim ~~17~~ 15 further comprising an attaching flange for attaching the bellows to the mounting plate.

22. (Currently Amended) The apparatus of claim ~~17~~ 13 wherein the bellows is axially displaceable ~~with respect to the mounting plate~~ along the axial path to accommodate movement of the wrist with respect to the robot arm and axial displacement of the line.

23. (Withdrawn)

24. (Currently Amended) The apparatus of claim ~~16~~ 13 wherein the bellows is made from at least one of natural rubber, styrene butadiene rubber, acrylic nitrile rubber, chlorobutadiene rubber, fluorine rubber or polychlorotetrafluoroethylene.

25. (Currently Amended) The apparatus of claim 22 wherein the bellows is displaceable along the axis axial path in a range of about 5mm. to 30mm.

26. (Currently Amended) An axially flexible robot line routing apparatus for use in routing lines ~~in an axially~~ along an axial path from a robot arm through a wrist comprising:

a wrist attached to the arm and rotatable with respect to the arm along the axial path;

~~a conduit concentrically positioned in the wrist along the axial path;~~

a mounting plate connected to the robot arm positioned between the robot arm and the wrist, the mounting plate having a through hole along the axial path;

at least one robot line passing from the robot arm through the mounting plate hole and the conduit wrist along the axial path, ~~the line positioned in a helical orientation to itself along the axial path;~~ and

an axially displaceable bellows positioned along the axial path around a portion of the at least one line, the bellows is connected concentrically attached to the line and the mounting plate axially ~~distant from the wrist encompassing a portion of the line.~~

27. (Currently Amended) The apparatus of claim 26 wherein the bellows sealingly connects ~~engages the conduit through sealing attachment of the bellows~~ to the mounting plate and the line.

28. (Currently Amended) The apparatus of claim 26 further comprising a flange positioned along the axial path in concentric overlapping relation with a portion of the bellows for sealing ~~engagement~~ connection of the bellows to the mounting plate.

29. (Withdrawn)

30. (Currently Amended) The apparatus of claim 26 further

comprising a guide plate positioned along the axial path having at least one hole for passage of the at least one line and sealing engagement of the guide plate to the at least one line. concentrically and sealingly engaged to the line opposite the mounting plate.

31. (Withdrawn)

32. (Currently Amended) An axially flexible robot line routing apparatus for routing at least two lines along an axial path through a robot arm and a wrist moveable relative to the arm along an axial path, the apparatus comprising:

~~a wrist concentrically mounted to the arm and rotatable with respect to the arm about the axial path;~~

~~a conduit positioned in the wrist along at least a portion of the axial path;~~

~~a connecting piece positioned between and attached to the robot arm and positioned between the robot arm and the wrist, the connecting piece having at least one through hole along the axial path for passage of the at least two lines;~~

~~a mounting plate attached to the connecting piece positioned between the robot arm and the connecting piece, the mounting plate adjacent the robot arm having at least one hole in concentric alignment with the connecting piece hole for passage of the at least two lines;~~

~~a guide plate positioned along the axial path positioned between the connecting piece and the robot arm, the guide plate having a peripheral surface and at least two holes for passage of the at least two lines through the guide plate; and~~

~~an axially displaceable bellows concentrically attached connected to and in sealing engagement to with the mounting plate and the guide plate adjacent the robot arm along the axial path; and the bellows permitting extension and compression of the at least two lines along the axial path on movement of the wrist relative to the robot arm.~~

~~at least two robot lines passing through the robot arm and in sealing engagement with the bellows, the lines positioned in helical wrapped relationship with respect to one another in the conduit along the axial path permitting axial extension and compression of the lines along the axial path.~~